

ABSTRACT OF THE DISCLOSURE

A method and system of controlling auto-ignition timing in an internal combustion engine cylinder in which the timing of auto-ignition in prechambers that are coupled to the cylinder is precisely controlled. The auto-ignition in the prechambers is  
5 produced by a compression stroke using pistons situated within the prechambers. Hot gas jets produced by the prechamber auto-ignitions are introduced into the charge space of the cylinder and rapidly induce a second auto-ignition of the mixture in the cylinder. By precisely controlling the timing of the auto-ignitions within the prechambers, the timing of the auto-ignition within the cylinders can, in turn, be  
10 precisely controlled.